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PERFORMANCE OF STOCKERS GRAZING TIFTON 85 BERMUDAGRASS AND RECEIVING DIFFERENT LEVELS OF PROTEIN SUPPLEMENTATION

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Background. Grazing studies at TAMU-Overton have shown improved gains with Tifton 85 bermudagrass (TIF85) and protein supplementation (SUP). The following treatments were used to evaluate level of protein on gain of stockers grazing TIF85: (1) free choice mineral only (PAS), (2) PAS plus 0.2% body weight SUP (.2BW), (3) PAS plus 0.4% BW SUP (.4BW), or (4) PAS plus 0.8% BW SUP (.8BW). The 36% SUP consisted of a 2:1 SBM:corn ration including salt, magnesium oxide, dicalcium phosphate, and Rumensin 80. Rations were mixed to ensure all treatments received the same amount of each micro ingredient: thus, only the amount of SBM and corn varied. On a weight basis, amount of SUP fed averaged 1.64, 3.22, and 6.44 lb/hd/da for .2BW, .4BW, and .8BW, respectively. Steers and heifers from Angus X Brahman dams and Simmental sires were weaned on June 13 and assigned to three pastures of each treatment on June 24. Pastures were stocked at 3.5 hd/ac, with 5 test animals per pasture.

Research Findings. The ADGs during this 90-day period were 1.55, 1.79, 2.02, and 2.44 lb/hd/da, respectively, for PAS, .2BW, .4BW, and .8BW (Table 1). Each increase in the amount of SUP fed showed an increase ($P<.07$) in ADG. Overall, stockers with .8BW SUP gained 80 lbs more than those grazing PAS. During the first 56 days, ADG was 2.05, 2.27, 2.54, and 2.80 lbs/da, respectively, for PAS, .2BW, .4BW, and .8BW. The decline in ADG during the last month was likely due to reduced leaf:stem ratio, thus lower forage nutritive value. Gain in BW of stockers receiving .8BW SUP continued to increase at a faster rate than other treatments (Fig 1). Overall, additional gain due to SUP was .24, .47, and .89 lbs/da, respectively, for .2BW, .4BW, and .8BW (Table 1). Supplement:extra gain ranged from 6.83, 6.85, and 7.24, respectively for .2BW, .4BW, and .8BW. Substitution of supplement for forage was evident as SUP level increased; however, the rate of increase in feed:gain, which represented a reduced efficiency of supplement action, was not as dramatic as anticipated.

Application. Protein supplementation enhances stocker gains from Tifton 85 bermudagrass. Costs of supplement, feeding facilities, and labor should be considered before SUP practices are implemented. If ration cost is \$200/ton, or .10/lb, then ration costs alone for these SUP groups were \$.68, \$.69, and \$.72 per pound of extra gain, respectively, for .2BW, .4BW, and .8BW. Liveweight gains per acre from this study were 486, 564, 637, and 770 lbs/ac, respectively, for PAS, .2BW, .4BW, and .8BW. As stocker value increases, supplementation

options generally become more economically feasible. Factors to consider other than costs include stocking rate, climatic uncertainties, steers vs replacement heifers, and retained ownership for feedlot finishing.

Figure 1 Growth of Stockers Grazing Tifton 85

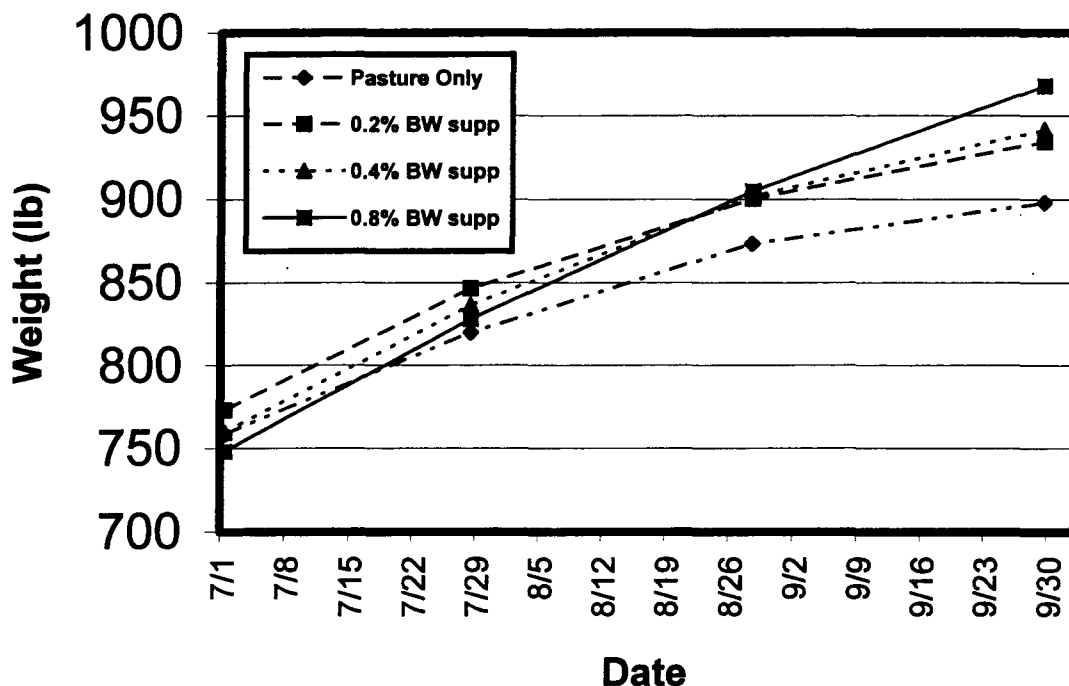


Table 1. Average daily gain (ADG), total body weight (BW) gain, and supplement efficiency for stockers grazing Tifton 85 bermudagrass and receiving protein supplementation.

Period / Item	Supplement, % BW			
	0	0.2	0.4	0.8
	----- lbs/hd/da -----			
Day 0-27	2.27	2.72	2.84	2.96
Day 28-56	1.84	1.85	2.26	2.64
Day 56-90	0.73	1.00	1.17	1.85
<u>Totals</u>				
Day 0-56 ¹	2.05 ^a	2.27 ^a	2.54 ^b	2.80 ^c
Day 0-90 ²	1.55 ^a	1.79 ^b	2.02 ^c	2.44 ^d
	----- lbs -----			
Initial BW	759	773	760	748
Final BW	898	934	942	968
Gain BW	139	161	182	220
	----- lbs/hd/da -----			
AVE Daily Suppl.	-	1.64	3.22	6.44
Extra Gain	-	.24	.47	.89
Suppl:Extra Gain	-	6.83	6.85	7.24

1. a, b, c Means in a row followed by a different letter differ statistically (P<.1).

2. a, b, c, d Means in a row followed by a different letter differ statistically (P<.07).